

*Appln no. 10/668,799  
Amendment dated Oct. 21, 2005  
Response to final Office Action of June 21, 2005*

#### REMARKS

Applicant has amended claims 1 and 17. Claims 1-31 are pending. Reconsideration of this application, as amended, is requested.

#### The Claims, Generally, As Amended

The presently claimed invention is directed to an abrasive array and to an abrasive article. Each includes an array of protruding units, the array being at least two by two. Each unit has a base defined by a perimeter, which includes a first side and a second side opposite to the first side. Distal to the base, each unit has a distal linear region, which when projected on to a plane that is coplanar with its respective base, extends between a non-central point on the first side of the base and a non-central point on the second side of the base. This projection of the distal linear region is not co-linear to a third side of the base; that is, the distal linear region does not form a plane orthogonal to the third side of the base.

Applicant believes the amendments to claims 1 and 17, which clarified that the projection of the distal linear region is not co-linear to a third base side, should address the concerns raised in the Office Action on the bottom of page 4.

#### Claim Rejections

Claims 1, 2, 5-7, 9, 11, 13-18, 21-23, 25, 27 and 29-31 were rejected under 35 U.S.C. 102(b) as anticipated by Pieper et al. (U.S. Patent No. 5,152,917). Applicant disagrees with this rejection.

Claims 3, 4, 8, 10, 12, 19, 20, 24, 26 and 28 were rejected under 35 U.S.C. 103(a) as unpatentable over Pieper et al. (U.S. Patent No. 5,152,917). Applicant also disagrees with this rejection.

Applicant has previously discussed Pieper et al. and does not repeat those arguments here. Applicant also disagrees with various contentions in the Office Action.

The Office Action states that "Pieper et al. discloses all of the limitations of claims 1 and 17, i.e., abrasive array of protruding units within a distal linear apex for each unit when projected on to a coplanar plane with its respective base, extends between non-central points on opposite first and second sides, e.g., sawtooth shapes which does [sic] not necessarily mean the side is 90

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degrees or orthogonal to the base, further see embodiment of Fig. 18, similar to the embodiment of Fig. 6A of the instant application."

The Office Action has reproduced FIG. 9 of Pieper et al. therein, which illustrates a perspective side-view of a sawtooth pattern of protruding units, each unit having a distal linear region or apex, which when projected onto the base, extends between a non-central point on the first side of the base and a non-central point on the second side of the base. Applicant continues to assert that the distal linear region of this sawtooth pattern is positioned 90 degrees to or orthogonal to the base edge, or, that the projection of this distal linear region is co-linear with an edge of the base.

The Office Action provides (in the quote reproduced above) that Pieper et al. teaches or suggests sawtooth shapes which do not necessarily have the side at 90 degrees or orthogonal to the base. Applicant requests the Examiner point to this in Pieper et al., as Applicants have not found such a suggestion. FIG. 8 is a top view of a sawtooth pattern, FIG. 9 is a side view of a sawtooth pattern, and FIG. 17 is also a side view of a sawtooth pattern. Each of these figures illustrates protrusions having a distal linear region orthogonal to the base.

The Office Action does direct Applicants attention to FIG. 18 of Pieper et al., and also reproduces the figure, which is supposedly similar to the embodiment of FIG. 6A of the instant application. Applicant disagrees with this. FIG. 18 of Pieper et al. is a top view of an array of three-sided pyramidal shapes, not of protruding units having distal linear region that extends between non-central points on the first side and second side of the base. Additionally, the pyramids of FIG. 18 of Pieper et al. have apex points.

Applicant does not understand why the direction to FIG. 18 of Pieper et al. and to FIG. 6A of the instant application. Neither the pyramidal composites of FIG. 18 nor the embodiment of FIG. 6A of the present invention are within the scope of the currently pending claims. In FIG. 6A, protruding units 600, 602, 604, 606 each has an apex 608, 610, 612, 614, respectively, that is substantially in the shape of a point. The currently pending claims recite that a projection of the linear distal region extends between opposite first and second sides of the base.

Thus, the relevant portions of Pieper et al. are FIGS. 8 and 9 and 17 which illustrate sawtooth shapes. In all of FIGS. 8, 9 and 17, the linear distal region is positioned at or orthogonal to the base of the shape. As stated above, Applicant has found no teaching or

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suggestion of an abrasive composite having a sawtooth shape that does not have the linear distal region orthogonal to the base end.

Regarding the required element that the protruding units are present in an at least two-by-two array, Applicant disagree with the logic behind the discussion on page 4 of the Office Action. The Office Action indicates that FIGS. 8 and 9 disclose an array of protruding units, which meets the limitation "at least two-by-two array of protruding units". Applicant disagrees. FIGS. 8 and 9 do disclose an array of protruding units; see, for example, column 8, lines 16-17 and lines 19-20 which state that the FIGS. 8 and 9 show linear grooves, which can be abrasive composites disposed in a predetermined array. What FIG. 8 shows is a 2x1 array of protruding units, and what FIG. 9 shows is a 4x1 array (with the fourth protruding unit only being shown partially on the left side of FIG. 9). Both of these arrays are only one unit deep (in the paper direction). These disclosures do not meet the limitation of a 2x2 array.

Applicant contends that, at least for all these reasons provided above, Pieper et al. does not anticipate the pending claims. Withdrawal of the Section 102 rejection is requested.

Additionally, Pieper et al. does not suggest or lead one to the pending claims. At least because Pieper et al. does not meet every recitation of the pending independent claims, claims 1 and 17, and does not suggest every recitation of the pending independent claims, dependent claims are patentable at least for the same reasons that claims 1 and 17 are patentable. Withdrawal of the Section 103 rejection is requested.

#### Summary

In view of the above amendments and remarks, Applicant respectfully requests a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone Applicant's attorney Dan Biesterveld, Reg. No. 45,898, at 651.737.3193.

Respectfully submitted,

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